

## **SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE WATER AND NATURAL GROUNDWATER AQUIFER RECHARGE ELEMENT**

### **I. GOALS, OBJECTIVES AND POLICIES**

GOAL 1: To develop and maintain an adequate wastewater collection and treatment system which meets existing and projected needs of Fort Lauderdale users and those in the central zone of the Regional 2001 Plan.

OBJECTIVE 1.1: Provide wastewater service to adjacent jurisdictions within the Broward County Central Zone via Large User and other agreements through the time frames of the individual contracts.

*Evaluation Measure: Record of the City achieving and maintaining those levels of service standards established within the City.*

POLICY 1.1.1: The daily average sanitary sewer wastewater flowage level of service (millions of gallons per day - MGD) for Large Users shall be as listed below and as specified in agreements with Large Users:

	1997	2010
<u>Oakland Park</u>		
Annual Daily Average (MGD)	3.956	4.010
<u>Wilton Manors</u>		
Annual Daily Average (MGD)	1.500	2.032
<u>Tamarac</u>		
Annual Daily Average (MGD)	0.149	0.189
<u>Port Everglades</u>		
Annual Daily Average (MGD)	3.200	4.000

The average daily level of service for the City of Fort Lauderdale and portions of unincorporated Broward County currently in the service area shall be:

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1997                      2010

Annual Daily Average (MGD)    39.000                      43.000

POLICY 1.1.2: Ensure that the City and Large Users abide by the provisions of Large User and other Agreements.

POLICY 1.1.3: Require Large Users to provide yearly projections of future demand for services based on their respective future land use plans and projects for which development orders have been issued.

POLICY 1.1.4: Amendments to sanitary sewer Large User agreements that change the amount of service demand projected for future years shall require an amendment to this section of the Comprehensive Plan.

OBJECTIVE 1.2: As lead agency for the Broward County Central Zone, the City shall provide wastewater treatment operations to meet demands within the service area in an efficient, economical and environmentally sensitive manner through 2010.

*Evaluation Measure:                      Record of water treatment operations to meet demands within the service area at those levels of service standards established within the City.*

POLICY 1.2.1: Sewage Treatment facilities shall maintain an average daily flow capacity of 43.0 MGD and peak daily flow of 60.2 MGD until the facility is rerated to 47.0 MGD average daily flow and 67.2 MGD peak daily flow in 1998. An additional injection well came into service in 1998, which has increased disposal capacity from 75.0 MGD to 93.0 MGD.

POLICY 1.2.2: The level of service for wastewater is 214 gallons per capita (GPC) per day in 1997, with the ten year average 205 GPC per day.

POLICY 1.2.3: Sanitary sewer hook-up requirements shall be as follows:

- Residential: In instances where sewer mains exist or are installed in front of residential properties, property owners must either tie-in to the system or pay fees as though they are tied into the system. Should sewer mains be available and property owners opt to retain septic tanks, no permits shall be issued for repairs to the septic tank.

- Commercial/Industrial: All new Commercial and Industrial properties are required to tie into a sanitary sewer system. Property owners may be required to construct sewer lines and pump stations if they are not already available.

POLICY 1.2.4: Conduct wastewater operations and disposal giving due consideration to environmental quality impacts by requiring industrial pre-treatment with all Federally designated "Categorical" and "Significant" industries. The City's pre-treatment program and the industries themselves must be in compliance with all Environmental Protection Agency (EPA) and State of Florida requirements and directives.

POLICY 1.2.5: Maintain an inventory of commercial and industrial enterprises which utilize, produce or dispose of hazardous chemicals as a means to track potential sources of water contaminants.

OBJECTIVE 1.3: Expand and improve the necessary facets of the sanitary sewer system to meet the projected 2010 demand for the service area.

*Evaluation Measure: Record of expansions to sanitary sewer services to meet projected 2010 demands.*

POLICY 1.3.1: The existing wastewater system, in order to adequately collect and transmit sewage will be maintained or repaired on an average of five miles linear, per year, and the Capital Improvement Plan shall address priorities for wastewater systems.

POLICY 1.3.2: Provide extensions of the sanitary sewer system to new development in the City, as necessary, via agreements with developers to share costs on a negotiated basis.

POLICY 1.3.3: The City will extend sanitary sewers to all areas in wellfield zones. The first phase of this objective is planned as an assessment project designed in 1997 for construction in 1998/99. Three phases to follow. A systematic plan for conversion of priority areas of the City currently on septic tank to sanitary sewers will continue. The first conversion, done as a voluntary project will be proposed in 1998. These projects will be consistent with health needs and environmental standards.

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OBJECTIVE 1.4: By 2010 provide for a conversion of selected areas in the City from septic tanks to the sanitary sewer as a means to protect ground water quality.

*Evaluation Measure: Record of conversions from septic tanks to sanitary sewer system.*

POLICY 1.4.1: The City will utilize a shared funding source using Water and Wastewater enterprise funds and assessments. Depending on priority, the assessments may be voluntary or by decree of the City Commission.

POLICY 1.4.2: Priorities for conversion of areas currently using septic tanks shall be as follows:

First Priority: All properties within the wellfield zones of influence in the Prospect and Peele/Dixie Wellfields. The first of four scheduled projects was designed in 1997 and is scheduled for construction in 1998. Other projects to follow in sequence to 2010.

Second Priority: All property within the Central Business District (CBD) boundaries by 2010.

Third Priority: Residential areas abutting water bodies of Broward County.

POLICY 1.4.3: Areas other than described in Policy 1.4.2 shall be converted from septic systems to City sanitary sewer if a minimum of thirty percent of property owners request the City Commission for conversion, agree to pay for cost of laterals and sewer lines other than mains through fair-share assessments, and the City Commission grants approval. The City will fund the cost of any sewer mains, pumping stations, lift stations, and any engineering design necessary for the expansion.

OBJECTIVE 1.5: As a developed city, with only 3-4% vacant land available for new development, the City will continue to encourage redevelopment at increased densities and intensities of use in the Downtown-RAC, the Central Beach-RAC, the Northwest-RAC, and the Cypress Creek Area, as a method to reduce urban sprawl on a countywide basis.

*Evaluation Measure: Annual record of development permits issued in the Downtown-RAC, Central Beach-RAC, Northwest-RAC, and the Cypress Creek area.*

POLICY 1.5.1: Concentrate expansions of main capacities and upgrade system at the identified Focal Points.

OBJECTIVE 1.6: A 5.0 MGD expansion of the George T. Lohmeyer Wastewater Treatment Plant was provided by 1995 with a rating to 47.0 MGD by 1999 or 2000. All expansions will be with the cooperation of all appropriate governmental agencies to ensure that demands and cost of service are economically feasible.

*Evaluation Measure: Record of City participation in intergovernmental coordination programs for wastewater treatment facilities and services.*

POLICY 1.6.1: Utilize the “repair and renewal” fund to upgrade and replace major plant components on a continual basis. New screens and a cooling tower were added in 1996-97 with a projected reconstruction of the dewatering facility by 1999. A feasibility study of future expansion options will be completed by 2005.

POLICY 1.6.2: Expansions to City utilities shall include consideration of energy efficient design and operations.

GOAL 2: Develop and maintain an adequate water supply, treatment and distribution system which meets the existing and projected needs of the service area in an efficient, economical, and environmentally sensitive manner.

OBJECTIVE 2.1: Expand and improve the necessary facets of the water supply system to meet the projected 2000 and 2010 demand for the service area. In order to meet this objective the City retained a general water consultant to formulate an updated “Master Plan” to be completed by 2000.

*Evaluation Measure: Record of completion of consultant study to update the City’s Water Supply System Master Plan.*

POLICY 2.1.1: Immediate priorities for water system maintenance shall be as follows:

- instances where the health, safety and welfare of system users is a concern;
- repeated occurrences of leakage and/or breakage due to a deteriorated condition;

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- repeated quality problems including color, clarity, taste and odor complaints which do not pose a health threat.

POLICY 2.1.2: Coordinate expansion of the potable water system with the appropriate local governments to ensure that projected service area demands are considered in the cost of supplying new development in order to maintain economic feasibility.

POLICY 2.1.3: Water supply and distribution mains must assure adequate flow for both fire fighting and consumer needs.

POLICY 2.1.4: Provide extension of potable water mains and distribution lines to new development in the City, as necessary, via agreements with developers to share in costs on a negotiated basis.

POLICY 2.1.5: Potable water storage shall be a minimum of 19.0 million gallons per day. Daily potable water pressure shall be approximately 90 pounds of pressure, nightly water pressure shall be 70 pounds of pressure.

POLICY 2.1.6: The City will identify portions of the water system requiring upgrading to meet future demands as well as overall priorities and coordinate these improvements for public and/or private funding as necessary as per the results and recommendations of the Water and Wastewater Master Plan Update.

POLICY 2.1.7: Concentrate expansions of water lines and upgrades in the City identified Focal points.

OBJECTIVE 2.2: Continue to provide water service to adjacent jurisdictions through the time frames of individual interlocal agreements.

*Evaluation Measure: Record of City participation in interlocal agreements for potable water services.*

POLICY 2.2.1: The potable water daily average level of service for Large Users shall be as listed below:

	1997	2010
Oakland Park	4.3 MGD	3.6 MGD
Wilton Manors	1.5	1.6
Tamarac	0.1	0.1

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Plantation*	0.0	0.0
Dania*	0.1	0.0
Davie	0.0	0.1
International Airport*	0.0	0.0
Port Everglades	1.5	1.7

\*Emergency service only

The daily average potable water level of service for the City of Fort Lauderdale, Sea Ranch Lakes, Lauderdale-by-the-Sea, and the portions of unincorporated Broward County within the service area shall be:

1997	2010
43.8 MGD	48.0 MGD

POLICY 2.2.2: Amendments to large users agreements that change the amount of service (demand) projected for future years shall be reflected in an amendment to this element of the Comprehensive Plan.

OBJECTIVE 2.3: The City shall provide potable water service to meet the demands of the service area in an efficient, economical and environmentally sensitive manner through 2010.

*Evaluation Measure: Record of the City providing potable water service to meet the demands at adopted levels of service.*

POLICY 2.3.1: The level of service for potable water shall be 230 gallons per capita per day with a commitment to reduce per capita consumption by the renewal of Fort Lauderdale's Consumptive use permit in 2002. The installation of a "conservation rate" in 1996 can expedite this policy.

POLICY 2.3.2: Coordinate any necessary raw water wellfield expansion and specific well location with local land use plans and the appropriate County and regional agencies.

GOAL 3: Protect aquifer recharge potential and water supply quality in the City.

OBJECTIVE 3.1: The City shall continue to protect the viability of the Peele/Dixie and Prospect Wellfields by reducing the potential for contamination of the wells from pollution and saltwater intrusion.

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*Evaluation Measures:*      1. *Record of City participation in wellfield protection programs.*

2. *Record of annual wellfield analysis.*

POLICY 3.1.1: The City shall encourage and assist Broward County in enforcing the Wellfield Protection Ordinance to the maximum extent possible.

POLICY 3.1.2: Monitor activities at the Fort Lauderdale Executive Airport which may affect the wellfield.

POLICY 3.1.3: Voluntarily comply with all mandates of the Broward County Wellfield Protection Ordinance.

POLICY 3.1.4: Continue to use natural areas, ~~parks~~ and open space to facilitate both adequate drainage and aquifer recharge.

POLICY 3.1.5: Sample groundwater in the vicinity of potential industrial contamination annually to detect pollution which may enter the aquifer.

GOAL 4: Ensure that all areas of the City are reasonably protected from flooding giving to due consideration to the City's natural environment.

OBJECTIVE 4.1: Continue to review all new development and redevelopment, as per Development Review Requirements, to ensure that drainage is adequately and properly provided.

*Evaluation Measures:*      1. *Record of City designation of Conservation Areas on the City's Future Land Use Map (Series).*

2. *Record of review of site plans by the City's Public Services Department to insure adequate drainage by all regulating agencies.*

POLICY 4.1.1: The following design storms are established for drainage facility capacity:

- public road elevation: 10 year, one-day storm event.
- floor elevation: 100 year, three-day storm event.



The final design of new systems will be adjusted to mitigate problems within reasonable economical, physical, and environmental limitations.

POLICY 4.1.2: New development and redevelopment shall provide on site retention and treatment of the first inch of stormwater runoff through the use of vegetative swales, perforated pipe, deepwell injection, or by other means acceptable to City, County and/or State agencies or departments.

POLICY 4.1.3: Assure drainage and stormwater management utilizing the following standards for new development:

Road Protection	Residential streets with rights-of-way less than fifty feet wide to have crown elevations no lower than the elevation for the respective area depicted on the ten year "Flood Criteria Map."  Streets in rights-of-way greater than fifty feet wide to have an ultimate edge of pavement no lower than the elevation for the respective area depicted on the ten year "Flood Criteria Map."
Buildings	To have the lowest floor elevation no lower than the elevation for the respective area depicted on the "100 Year Flood Elevation Map." Retain the first inch on stormwater runoff on-site.
Off Site Discharge	After retaining the first inch of runoff not to exceed the inflow limit of SFWMD primary receiving canal or the local conveyance system, whichever is less.
Storm Sewers	Design frequency minimum to be three year rainfall intensity of the State Department of Transportation Zone 10 rainfall curves.
Flood Plain	Calculated Flood elevations based on the ten year and one hundred year return frequency rainfall of three day duration shall not exceed the corresponding elevations of the ten year "Flood

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Criteria Map" and the "100 Year Flood Elevation  
Map."

POLICY 4.1.4: Land development regulations shall be developed and adopted to implement minimum design criteria for drainage improvements.

POLICY 4.1.5: Utilize the land use designations of Conservation and Park/Open Space to protect open natural drainage areas from undue development.

OBJECTIVE 4.2: The City shall continue to support the National Flood Insurance Program, disseminate information relative to its provisions, and enforce conformance of building elevations to minimize flood loss hazards.

*Evaluation Measure: Record of participation in FEMA program.*

POLICY 4.2.1: Participate in programs designed to protect life and property.

POLICY 4.2.2: Participate in the update of Federal Emergency Management Administration (FEMA) maps as per federal requests.

OBJECTIVE 4.3: Monitor and participate in the Federal National Pollution Discharge Elimination System (NPDES) permitting program.

*Evaluation Measure: Record of participation in the NPDES program.*

POLICY 4.3.1: Apply for and receive a Municipal Separate Stormwater System permit.

POLICY 4.3.2: Comply with specific conditions of stormwater sampling and infrastructure maintenance and repair for the ensuing annual reports.

POLICY 4.3.3: Incorporate the City's needs analysis into the NPDES permit by 2002.

POLICY 4.3.4: Provide local drainage data and other pertinent information to Broward County for analysis and assessment as part of its permitting process.

OBJECTIVE 4.4: Pursuant to the 1991 Broward County Drainage Assessment, the City will determine the best course regarding drainage needs and potential improvements including extensions of or increases in capacity of facilities in

coordination with the South Florida Water Management District, the Regional Planning Council, Broward County and private developers.

*Evaluation Measure: Record of improvements to drainage facilities necessary to meet the drainage needs and increase in drainage capacity as identified in the 1991 Broward County Drainage Assessment.*

POLICY 4.4.1: Determine areas in the City in which stormwater is not adequately addressed, by completing a Needs Analysis.

POLICY 4.4.2: As a consequence of this analysis the City shall set priorities regarding replacement, correcting deficiencies, and addressing future needs on an annual basis.

POLICY 4.4.3: As part of the City's course of action regarding drainage, priorities shall include the elimination of as much non-point source pollution through stormwater discharge as is physically and economically possible.

POLICY 4.4.4: Following a determination of the City's course of action, amend this objective as appropriate.

POLICY 4.4.5: The City adopts the surface water standards of Chapter 27 Pollution Control of the Broward County Code of Ordinances (27-195) as the standards for stormwater discharge in the City. These standards are consistent with Chapter 17-25 F.A.C. standards for water quality.

GOAL 5: Continue to provide for a high quality of solid waste removal services for city residents and businesses.

OBJECTIVE 5.1: The City will participate, as appropriate, with Broward County solid waste disposal operations including future resource recovery operations.

*Evaluation Measure: Record of City participation in Broward County solid waste disposal operations.*

POLICY 5.1.1: The City shall support the development of cost-efficient means to maximize the recovery of materials and energy from solid wastes.

POLICY 5.1.2: Support County efforts to provide disposal capabilities as stated in the Solid Waste Element, Broward County Comprehensive Plan.

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POLICY 5.1.3: Participate in the County's Resource Recovery program as a means to reduce the amount of trash sent to the landfill.

OBJECTIVE 5.2: The City will provide for adequate convenient and economical solid waste collection and disposal within its service area to meet existing and future demands through the year 2010.

*Evaluation Measure: Record of City's provision of an economical and efficient solid waste disposal and collection service.*

POLICY 5.2.1: The City shall provide collection of approximately an existing 8 pounds per capita per day with no increase projected through the year 2000, and 7.5 lbs per capita per day in 2001-2002 and 7.2 lbs per capita per day in 2003-2004.

POLICY 5.2.2: The City will continue to make provisions for solid waste collection by City and/or private haulers and solid waste disposal at County facilities described herein.

POLICY 5.2.3: The City will investigate and participate in new Broward County programs aimed at implementing innovative methods of waste collection and disposal in accordance with new State laws requiring recycling of approximately 35% of all paper, metal, plastic and glass.

POLICY 5.2.4: All firms within the City which maintain hazardous materials on their premises shall comply with DNRP licensing requirements. As per DNRP regulations, each licensee shall have an emergency clean-up plan, secondary containment, specific and general site conditions and proper storage, processing, use and disposal provisions.

OBJECTIVE 5.3: Operate a municipal trash transfer station at a centrally accessible site through 2010.

*Evaluation Measure: Record of development of trash transfer stations.*

POLICY 5.3.1: The City shall work to deter the illegal disposal of garbage and refuse at unauthorized sites by developing, promoting and publicizing the use of legal trash transfer collection facilities and by enforcing laws, ordinances and codes related to illegal dumping.

POLICY 5.3.2: Provide for convenient and economical means of trash disposal by the establishment and operation of a neighborhood trash transfer stations and the operation of the citywide bulk collection program.